CLAIMS

1. A method of preparation for diamond, graphite or mixtures of diamond and graphite, comprising a step of contacting an active metal capable of reducing carbon source to elementary carbon with a carbon source of CO and/or CO_2 and/or its origin under conditions enough to reduce carbon source into elementary carbon so as to carry out a reduction reaction.
2. The method as claimed in Claim 1, wherein said carbon source is CO_2 or CO_2 source or their mixtures.
3. The method as claimed in Claim 2, wherein said CO_2 includes dry ice and said CO_2 source includes oxalates, carbonates or their mixtures.
4. The method as claimed in Claim 2, wherein said active metal is a metal having standard electrode potential lower than -2.2 V.
5. The method as claimed in Claim 4, wherein said active metals are at least one selected from a group consisting of Na, Li, K, Rb, Cs, Mg, Ca, Sr and Ba.
6. The method as claimed in Claim 5, wherein when said active metals are at least one selected from a group consisting of Na, Li, K, Rb and Cs, the temperature of the reduction reaction should at be at least 300℃; when said active metal is at least one selected from a group consisting of Mg, Ca, Sr and Ba, the temperature of the reduction reaction should be at least 650℃;
7. The method as claimed in Claim 1, wherein the pressure of the reduction reaction should be at least 0.2 kbar.
8. The method as claimed in Claim 1, further comprising a step of adding diamond particulate as crystal seed into the reaction system before the start of the reaction.
9. The method as claimed in Claim 1, further comprising a step of subjecting raw diamond or mixture of diamond and graphite to a purification process to yield pure diamond granules.
10. The method as claimed in Claim 9, wherein said purification processes could be carried out either by intensive heat treatment with perchloric acid or by sedimentation separation in aqueous solution of gum Arabic.